

RULE 1420.2 EMISSION STANDARDS FOR LEAD FROM METAL MELTING FACILITIES

(a) Purpose

The purpose of this rule is to protect public health by reducing emissions and ambient air concentrations of lead from metal melting facilities, reduce public health impacts by reducing the exposure to lead, and to help ensure attainment and maintenance of the National Ambient Air Quality Standard for Lead.

(b) Applicability

This rule applies to all persons who own or operate a metal melting facility that melts 100 tons or more of lead a year based on any of the five calendar years prior to October 2, 2015, or any year thereafter. Applicability shall be based on facility lead processing records required under subdivision (k) of this rule and subdivision (i) of Rule 1420 – Emissions Standards for Lead.

(c) Definitions

For the purposes of this rule, the following definitions shall apply:

- (1) AMBIENT AIR means outdoor air.
- (2) CASTING means the formation of metallic parts or casts by pouring melted metal into a mold and core assembly or into a mold for ingots, sows, or cylinders.
- (3) CONSTRUCTION OR MAINTENANCE ACTIVITY means any of the following activities conducted outside of a total enclosure with negative air that generates or has the potential to generate fugitive lead-dust:
 - (A) building construction or demolition, the altering of a building or permanent structure, or the removal of one or more of its components;
 - (B) replacement or repair of refractory, filter bags, or any internal or external part of equipment used to process, handle, or control lead-containing materials;
 - (C) replacement of any duct section used to convey lead-containing exhaust;
 - (D) metal cutting or welding that penetrates the metal structure of any equipment, and its associated components, used to process lead-containing material, such that lead dust within the internal structure or its components can become fugitive lead-dust;

- (E) resurfacing, grading, repairing, or removing ground, pavement, concrete, or asphalt; or
- (F) soil disturbances, including but not limited to, soil sampling and soil remediation, or activities where soil is moved, removed, and/or stored.
- (4) DUCT SECTION means a length of duct including angles and bends which is contiguous between two or more process devices (e.g., between a furnace and heat exchanger; baghouse and scrubber; scrubber and stack; etc.).
- (5) DUST SUPPRESSANTS are water, hygroscopic materials, or non-toxic chemical stabilizers used as a treatment material to reduce fugitive dust emissions.
- (6) EMISSION COLLECTION SYSTEM means any equipment installed for the purpose of directing, taking in, confining, and conveying an air contaminant, and which at minimum conforms to design and operation specifications given in the most current edition of *Industrial Ventilation, Guidelines and Recommended Practices*, published by the American Conference of Governmental Industrial Hygienists, at the time a complete permit application is filed with the District.
- (7) EMISSION CONTROL DEVICE means any equipment installed in the ventilation system of a lead point source or emission collection system for the purposes of collecting and reducing emissions of lead.
- (8) FUGITIVE LEAD-DUST means any solid particulate matter containing lead that is in contact with ambient air and has the potential to become airborne.
- (9) FURNACE means a device used to melt metal including, but not limited to, cupola, electric arc, pot, induction, blast, crucible, sweat, and reverberatory furnaces.
- (10) FURNACE, REFINING, OR CASTING AREA means any area of a metal melting facility in which:
 - (A) Melting furnaces are located;
 - (B) Refining operations occur; or
 - (C) Casting operations occur.
- (11) LEAD means elemental lead, lead compounds calculated as elemental lead, and elemental lead found in alloys.
- (12) LEAD POINT SOURCE means any process, equipment, or total enclosure used at a metal melting facility, including, but not limited to, furnaces, tapping ports, or refining kettles, whose lead emissions pass through a stack or vent designed to direct or control the exhaust flow prior to release into the ambient air.

- (13) **LEEWARD WALL** means the furthest exterior wall of a total enclosure that is opposite the windward wall.
- (14) **MEASURABLE PRECIPITATION** means any on-site measured rain amount greater than 0.01 inches in any complete 24-hour calendar day (i.e., midnight to midnight).
- (15) **METAL** means ferrous (iron-based) metals and alloys and non-ferrous (non-iron-based) metals and alloys. Examples of metals include, but are not limited to, iron, steel, and their iron-based alloys; aluminum, copper, brass, bronze, gold, silver, zinc, tin, lead, platinum, nickel, chromium, cadmium, manganese, mercury, tungsten, and titanium and their non-ferrous alloys.
- (16) **METAL MELTING FACILITY** means any facility that operates a furnace in which scrap metal, ingots, and/or other forms of metals are charged and melted, with the melted metal tapped or poured into a ladle or directly into a mold or other shape forming receptacle.
- (17) **PARTIAL ENCLOSURE** means a structure comprised of walls or partitions on at least three sides or three-quarters of the perimeter that surrounds areas where a construction or maintenance activity is conducted, in order to prevent the generation of fugitive lead-dust.
- (18) **PRIMARY CAUSE** means the most significant contributor to a lead exceedance at a monitor.
- (19) **PROCESS** means using lead or lead-containing materials in any operation including, but not limited to, the charging of lead-containing materials to melting furnaces, lead refining operations, and casting operations.
- (20) **SLAG** means the inorganic material by-product discharged, in melted state, from a smelting furnace that has a lower specific gravity than lead metal and contains lead compounds. This shall include, but is not limited to, lead sulfate, lead sulfide, lead oxides, and lead carbonate consisting of other constituents charged to a smelting furnace, which are fused together during the pyrometallurgical process.
- (21) **SMEETING** means the chemical reduction of lead compounds to elemental lead or lead alloys through processing in temperatures greater than 980° C.
- (22) **SMEETING FURNACE** means any furnace where smelting takes place including, but not limited to, blast furnaces, reverberatory furnaces, rotary furnaces, and electric furnaces.
- (23) **TOTAL ENCLOSURE** means a permanent containment building/structure, completely enclosed with a floor, walls, and a roof to prevent exposure to the

elements, (e.g., precipitation, wind, run-off), with limited openings to allow access and egress for people and vehicles, that is free of cracks, gaps, corrosion, or other deterioration that could cause or result in fugitive lead-dust.

- (24) VALID 24-HOUR SAMPLE means a sample in which the sampling run-time was no less than 23 hours and no greater than 25 hours, with the sample collection conducted using Title 40, CFR 50 Appendix B - *Reference Method for the Determination of Suspended Particulate Matter in the Atmosphere (High Volume Method)*, or U.S. EPA-approved equivalent methods.
- (25) WINDWARD WALL means the exterior wall of a total enclosure which is most impacted by the wind in its most prevailing direction determined by a wind rose using data required under paragraph (e)(9) of this rule, or other data approved by the Executive Officer.

(d) Ambient Air Lead Concentration Limit

- (1) The owner or operator of a metal melting facility shall not discharge emissions into the atmosphere which contribute to ambient air concentrations of lead that exceed the following:

Effective Date	Ambient Air Concentration of Lead, ($\mu\text{g}/\text{m}^3$) averaged over any 30 consecutive days
Beginning October 2, 2015 – March 31, 2018	0.150
On or After April 1, 2018	0.100

- (2) For facilities that do not have approved ambient air monitoring and sampling sites by the Executive Officer by October 2, 2015, the ambient air lead concentration limit of $0.150 \mu\text{g}/\text{m}^3$ averaged over any 30 consecutive days shall be met beginning 90 days from approval of the Ambient Air Monitoring and Sampling Plan pursuant to paragraph (e)(2).
- (3) An exceedance of the ambient air concentrations of lead specified in the above table shall occur if it is measured by any monitor installed pursuant to subdivision (e), by any District-installed monitor collocated with a monitor installed pursuant to subdivision (e), or by any District-installed monitor located beyond the property line of a metal melting facility that measures lead concentrations resulting from the facility.

- (4) In the event that a metal melting facility exceeds the applicable ambient lead concentration limit specified in paragraph (d)(1), the owner or operator may provide information to the Executive Officer to substantiate its position that the primary cause of the exceedance is not attributed to its metal melting facility. In the event the owner or operator exercises this opportunity to demonstrate that the primary cause of the exceedance is not attributed to its metal melting facility, the owner or operator shall submit the following information to the Executive Officer within fourteen days of when the owner or operator of the metal melting facility knew or should have known that the ambient lead concentration exceeded the applicable limit specified in paragraph (d)(1):
 - (A) Date and time of the exceedance;
 - (B) Location of the monitor where exceedance was measured;
 - (C) Monitored ambient lead concentration levels at all of the facility's monitors for the prior 30 days, including the date of the exceedance;
 - (D) Wind direction(s) during the timeframe of the exceedance;
 - (E) Description of the alleged primary cause(s) and source(s) of the exceedance including timeframe and location; and
 - (F) Evidence demonstrating that the primary cause(s) of the exceedance is not attributed to the facility's operations such as other monitored data, photographs, and video.
 - (5) The Executive Officer shall consider the information submitted under paragraph (d)(4) and notify the owner or operator of the determination in writing. If the Executive Officer determines that the primary cause(s) of the exceedance is not attributed to the metal melting facility, that exceedance will not be considered a violation of the applicable ambient lead concentration limit per subdivision (d) nor an exceedance requiring submittal or implementation of a Compliance Plan per subdivision (m).
- (e) Ambient Air Monitoring Requirements
- (1) No later than March 1, 2016, the owner or operator of a metal melting facility shall submit a Lead Ambient Air Monitoring and Sampling Plan for review and approval by the Executive Officer, subject to plan fees as specified in District Rule 306 – Plan Fees, that includes information specified in subparagraphs (e)(1)(A) through (e)(1)(C):
 - (A) Source test results of all lead point sources conducted pursuant to subdivision (j).

- (B) Map of the facility identifying the location of all lead emission sources, air pollution control devices, stacks, enclosures, openings of enclosures, storage of lead containing materials, roadways where vehicles carrying lead containing materials travel within the facility, vehicle egress and ingress locations, the property line of the facility, the fence line of the facility if it differs from the property line of the facility, and any areas within the property line of the facility that are publicly accessible.
 - (C) Number and locations for sampling sites that meet the requirements of paragraph (e)(2).
 - (D) The Executive Officer shall notify the owner or operator in writing whether the Lead Ambient Air Monitoring and Sampling Plan is approved or disapproved.
 - (i) Determination of approval status shall be based on, at a minimum, submittal of information that satisfies the criteria set forth in subparagraphs (e)(1)(A) through (e)(1)(C).
 - (ii) If the Lead Ambient Air Monitoring and Sampling Plan is disapproved, the owner or operator shall resubmit the plan, subject to plan fees specified in Rule 306, within 30 calendar days after notification of disapproval of the plan. The resubmitted plan shall include any information necessary to address deficiencies identified in the disapproval letter. It is a violation of the rule for a facility not to have an approved Lead Ambient Air Monitoring and Sampling Plan after the second denial.
 - (iii) If the resubmitted plan is denied, the owner or operator may appeal the denial by the Executive Officer to the Hearing Board under Rule 216 – Appeals and Rule 221 – Plans.
- (2) No later than 90 days after approval of a Lead Ambient Air Monitoring and Sampling Plan, the owner or operator of a metal melting facility shall install and conduct ambient air lead monitoring and sampling as follows:
- (A) Collect samples from a minimum of three sampling sites. Locations for sampling sites shall be approved by the Executive Officer.
 - (B) Locations for sampling sites shall be based on maximum expected ground level lead concentrations, at or beyond the property line, as determined by Executive Officer-approved air dispersion modeling calculations and emission estimates from all lead point sources and fugitive lead-dust

- sources, and other factors including, but not limited to, population exposure and seasonal meteorology.
- (C) The Executive Officer may require one or more of the sampling sites to be at locations that are not based on maximum ground level lead concentrations, and that are instead at locations at or beyond the property line that are representative of upwind or background concentrations.
 - (D) Sampling sites at the property line may be located just inside the fence line on facility property if logistical constraints preclude placement outside the fence line at the point of maximum expected ground level lead concentrations.
 - (E) The Executive Officer may require a facility to relocate existing monitors or install additional monitors to those required under subparagraph (e)(2)(A) in order to measure ambient air lead concentrations at locations that may contribute to the exceedance of an ambient air lead concentration limit specified in subdivision (d) if information becomes available showing:
 - (i) A new or existing source of lead emissions that was not previously identified or fully disclosed;
 - (ii) An increase in lead emissions from an existing source where existing monitors are not capturing the potential ambient air lead concentration; or
 - (iii) That none of the existing monitors are capturing the maximum expected ground level lead concentration.
- (3) Any facility that is conducting ambient air lead monitoring and sampling prior to October 2, 2015 where the number and locations of the monitors have been approved by the Executive Officer and meet the requirements specified subparagraphs (e)(2)(A) through (e)(2)(D) shall continue conducting ambient air lead monitoring and sampling as approved by the Executive Officer. An owner or operator shall not be subject to the plan submittal requirements of paragraph (e)(1) if the plan previously approved by the Executive Officer for the existing ambient air lead monitoring and sampling system meets the requirements of subparagraphs (e)(2)(A) through (e)(2)(D), and in which case the previously approved plan shall be subsumed into the requirements of this rule and be considered a Lead Ambient Air Monitoring and Sampling Plan under this rule.
- (4) All facilities, except those that meet the applicability of paragraph (e)(3), shall conduct ambient air monitoring and sampling as follows:

- (A) Commission the ambient air monitoring and sampling network by collecting a valid 24-hour, midnight-to-midnight sample at all sites for 30 consecutive days from the date of initial sampling.
 - (B) After the commission period specified above, collect one valid 24-hour, midnight-to-midnight sample at least once every six calendar days, on a schedule approved by the Executive Officer.
- (5) Notwithstanding paragraph (e)(4), facilities shall collect a valid 24-hour, midnight-to-midnight sample according to the requirements specified in subparagraph (e)(5)(A) through (e)(5)(D), if any of the exceedances of subparagraph (e)(5)(A) or (e)(5)(C) occur:

(A)

Effective Date	Ambient Air Concentration of Lead ($\mu\text{g}/\text{m}^3$) Averaged over any 30 consecutive days	Sampling Frequency at the Affected Monitor
On or Before March 31, 2018	0.150 - 0.300	1-in-3 days
	> 0.300	Daily
On or After April 1, 2018	0.100 - 0.150	1-in-3 days
	> 0.150	Daily

For facilities conducting ambient air monitoring and sampling pursuant to paragraph (e)(2), the effective date of the table above shall be 90 days after approval of a Lead Ambient Air Monitoring and Sampling Plan. For facilities conducting ambient air monitoring and sampling pursuant to paragraph (e)(3), the effective date of the table above shall be no later than October 2, 2015.

- (B) The owner or operator of a metal melting facility shall begin the applicable ambient air monitoring and sampling schedule specified in subparagraph (e)(5)(A) no later than three calendar days from the time the facility knew or should have known of the exceedance. The monitoring and sampling done pursuant to the schedule in subparagraph (e)(5)(A) shall remain in effect until the monitoring results at each affected monitoring station are

- at or below ambient air lead concentration limit specified in subdivision (d) for a period of 30 consecutive days.
- (C) The owner or operator of a metal melting facility shall collect a valid 24-hour midnight-to-midnight sample daily if:
- (i) The Executive Officer has approved a Health Risk Assessment for the facility after January 1, 2015 that exceeds the action risk level specified in District Rule 1402; and
 - (ii) After October 2, 2014, the facility has exceeded an ambient air lead concentration of $0.120 \mu\text{g}/\text{m}^3$ averaged over any 30 consecutive days measured by any monitor installed pursuant to subdivision (e), by any District-installed monitor collocated with a monitor installed pursuant to paragraph (e), or by any District-installed monitor located beyond the property line of a metal melting facility that measures lead concentrations resulting from the facility.
- (D) For facilities required to conduct daily sampling pursuant to (e)(5)(C), daily ambient air monitoring and sampling shall begin no later than three calendar days after approval of the Health Risk Assessment specified in clause (e)(5)(C)(i), no later than three calendar days from the time the facility knew or should have known of the exceedance specified in clause (e)(5)(C)(ii), or by October 2, 2015, whichever date is latest.
- (6) If a valid 24-hour, midnight-to-midnight sample was not collected due to a monitor malfunction or other occurrence beyond the control of the facility, the owner or operator shall:
- (A) Report with a notification made to 1-800-CUT-SMOG within 2 hours of knowing that the valid 24-hour, midnight-to-midnight sample was not collected providing the facility name, name of the monitor, the date of the occurrence, and the reason that the valid 24-hour, midnight-to-midnight sample was not collected; and
 - (B) For each of the monitors, the operator shall not miss a valid 24-hour, midnight-to-midnight sample for more than one day over a consecutive 30-day period.
- (7) The owner or operator of a metal melting facility shall submit samples collected pursuant to this subdivision to a laboratory approved under the SCAQMD Laboratory Approval Program for analysis within three calendar days of collection and calculate ambient lead concentrations for individual valid 24-hour

samples within 15 calendar days of the end of the calendar month in which the samples were collected. Split samples shall be made available and submitted to the District upon request by the Executive Officer.

- (8) Sample collection for lead shall be conducted using Title 40, CFR 50 Appendix B - *Reference Method for the Determination of Suspended Particulate Matter in the Atmosphere (High Volume Method)*, or U.S. EPA-approved equivalent methods, and sample analysis for lead shall be conducted using Title 40, CFR 50 Appendix G - *Reference Method for the Determination of Lead in Suspended Particulate Matter Collected from Ambient Air*, or U.S. EPA-approved equivalent methods.
- (9) Continuously record wind speed and direction data at all times using equipment approved by the Executive Officer at a minimum of one location approved by the Executive Officer.
- (10) A facility may conduct valid 24-hour sampling on a schedule different than midnight-to-midnight if it is demonstrated to and approved by the Executive Officer that the alternative schedule is adequate to routinely collect valid 24-hour samples and is conducted using the sampling methods referenced in paragraph (e)(8). The approval may be temporarily suspended during days when the SCAQMD conducts concurrent sampling to verify monitor readings. The approval may also be permanently rescinded by the Executive Officer.
- (11) Ambient air quality monitoring shall be conducted by persons approved by the Executive Officer, or facility personnel trained and certified to conduct ambient air quality monitoring demonstrated through successful completion of a course offered or approved by the Executive Officer. Sampling equipment shall be operated and maintained in accordance with U.S. EPA-referenced methods.
- (12) All ambient air quality monitoring systems conducting daily sampling required by subparagraph (e)(5)(C) shall be equipped with a backup, uninterruptible power supply to ensure continuous operation of the monitoring system during a power outage, which must be installed no later than 30 days after daily sampling under subparagraph (e)(5)(C) is required.
- (13) Cleaning activities including, but not limited to, wet washing and misting, that could result in damage or biases to samples collected shall not be conducted within 10 meters of any sampling site required under this subdivision.
- (14) Lead samples collected pursuant to this subdivision shall be retained for one year. The samples shall be stored in an individually sealed container and labeled with

the applicable monitor and date. Upon request, the samples shall be provided to the Executive Officer within one business day.

(f) **Lead Point Source Emissions Controls**

No later than March 1, 2016, the owner or operator of a metal melting facility shall vent emissions from each lead point source to a lead emission control device that meets the requirements of this subdivision and is approved in writing by the Executive Officer.

- (1) Any lead emission control device, or series of lead emission control devices, shall reduce lead emissions by a minimum of 99% or meet an outlet mass lead emission rate of less than 0.00030 pounds per hour as determined by the most recent District-approved source test conducted on behalf of the facility or the District pursuant to subdivision (j). Subsequent to the initial source test to demonstrate compliance with the minimum 99% control efficiency, the owner or operator, may alternatively demonstrate, through a source test conducted pursuant to subdivision (j), that the total mass lead outlet emission rate is no greater than a total mass lead outlet emission rate requisite to achieve 99% control efficiency, as calculated using the most recent District-approved source test conducted at the inlet and outlet of the lead emission control device to determine compliance with the 99% control efficiency requirement, or meet an outlet mass lead emission rate of less than 0.00030 pounds per hour. Any permit modification to the equipment or process vented to the subject lead control device that may affect the amount of lead emissions from the equipment or process shall result in a new source test at the inlet and outlet of the lead emission control device to determine compliance with the 99% control efficiency requirement.
- (2) Filter media other than a filter bag(s) for any lead emission control device including, but not limited to, HEPA and cartridge-type filters, shall be rated by the manufacturer to achieve a minimum of 99.97% control efficiency for 0.3 micron particles.
- (3) Filter bag(s) for any lead emission control device shall be polytetrafluoroethylene membrane-type, or any other material that is equally or more effective for the control of lead emissions, and approved for use by the Executive Officer.
- (4) The total facility mass lead emissions shall be determined based on the average of triplicate samples, using the most recently approved source tests conducted on behalf of the facility or the District, pursuant to subdivision (j).
- (5) For each emission collection system subject to this subdivision, a periodic smoke test shall be conducted, unless performing such test presents an unreasonable risk

to safety, at least once every 3 months using the procedure set forth in Appendix 2 of this rule.

- (6) Each emission collection system and emission control device subject to this subdivision shall be approved in writing by the Executive Officer and, at minimum, be inspected, maintained, and operated in accordance with the manufacturer's specifications.

(g) Total Enclosures

(1) Enclosure Areas

No later than March 1, 2016, the owner or operator of a metal melting facility shall install a total enclosure, as defined in paragraph (c)(23), for the following areas:

- (A) Furnace, refining, and casting areas; and
- (B) Lead oxide production and pasting areas.

Total enclosures shall be designed in a manner that does not conflict with requirements set forth by the Occupational and Safety Hazard Assessment regarding worker safety.

(2) Total Enclosure Cross-Draft

The owner or operator of a metal melting facility shall minimize the cross-draft conditions of a total enclosure by closing any openings that result in a decrease in the collection of lead emissions for an emission collection system, including, but not limited to, vents, windows, passages, doorways, bay doors, and roll-ups. Acceptable methods to minimize cross-draft conditions include closing doors or openings when not in use, using automatic roll-up doors, installing plastic strip curtains, or installing vestibules. Alternative methods to closing openings may be used, if the owner or operator can demonstrate to the Executive Officer equivalent or more effective ways to minimize cross-draft conditions.

(3) Total Enclosure with Negative Air

- (A) The owner or operator of a metal melting facility shall provide negative air for a total enclosure specified in paragraph (g)(1) pursuant to Appendix 1 if:

- (i) The Executive Officer has approved a Health Risk Assessment for the facility after January 1, 2015 that exceeds the action risk level specified in District Rule 1402; and

- (ii) After October 2, 2014, the facility has exceeded an ambient air lead concentration of $0.120 \mu\text{g}/\text{m}^3$ averaged over any 30

consecutive days measured by any monitor installed pursuant to subdivision (e), by any District-installed monitor collocated with a monitor installed pursuant to paragraph (e), or by any District-installed monitor located beyond the property line of a metal melting facility that measures lead concentrations resulting from the facility.

- (B) Total enclosures with negative air subject to this paragraph shall be installed, maintained, and operated no later than two years after approval of a Health Risk Assessment specified in clause (g)(3)(A)(i), no later than two years after an exceedance referenced in clause (g)(3)(A)(ii) that occurred at a facility with an approved Health Risk Assessment referenced in clause (g)(3)(A)(i), or by April 1, 2018, whichever is latest.
 - (C) The Executive Officer may approve a request for an extension of the compliance deadline date in subparagraph (g)(3)(B) if the facility can demonstrate that it timely filed all complete permit applications and is unable to meet the deadline due to reasons beyond the facility's control. The request shall be submitted to the Executive Officer no later than 30 days before the compliance deadline date.
- (h) Housekeeping Requirements
- Unless otherwise specified, no later than 30 days after October 2, 2015, the owner or operator of a metal melting facility shall control fugitive lead-dust by conducting all of the following housekeeping practices:
- (1) Clean by wet wash or with a vacuum equipped with a filter(s) rated by the manufacturer to achieve a 99.97% control efficiency for 0.3 micron particles in a manner that does not generate fugitive lead-dust, the areas at the specified frequencies listed in subparagraph (h)(1)(A) through (h)(1)(D), unless located within a total enclosure vented to a lead emission control device. Days of measurable precipitation in the following areas occurring within the timeframe of a required cleaning may be counted as a cleaning.
 - (A) Quarterly cleanings, no more than 3 calendar months apart, of roof tops on structures \leq 45 feet in height that house areas associated with the processing, handling, or storage of lead-containing materials capable of generating any amount of fugitive lead-dust, excluding areas associated with the storage of raw, unprocessed lead-containing materials or finished lead-containing products;

- (B) Beginning no later than March 30, 2016, semi-annual cleanings, no more than 6 calendar months apart, of roof tops on structures > 45 feet in height that house areas associated with the processing, handling, or storage of lead-containing materials capable of generating any amount of fugitive lead-dust, excluding areas associated with the storage of raw, unprocessed lead-containing materials or finished lead-containing products; and
 - (C) Weekly cleanings by wet wash, vacuum, wet-mop, or stabilization with a dust suppressant of all:
 - (i) Areas where lead-containing wastes generated from housekeeping activities are stored, disposed of, recovered or recycled; and
 - (ii) Surfaces that accumulate lead-containing dust subject to foot traffic.
 - (D) Initiate immediate cleaning, no later than one hour after any construction or maintenance activity or event including, but not limited to, accidents, process upsets, or equipment malfunction, that causes deposition of fugitive lead-dust onto areas specified in subparagraphs (h)(1)(A) through (h)(1)(C). If the facility can demonstrate that delays were due to unreasonable risks to safety posed by earlier cleaning, or inability to reasonably obtain equipment required to implement this requirement, immediate cleanings of roof tops shall be completed within 72 hours.
- (2) Inspect all total enclosures and facility structures that house, contain or control any lead point source or fugitive lead-dust emissions at least once a month. Any gaps, breaks, separations, leak points or other possible routes for emissions of lead or fugitive lead-dust from the total enclosure to the ambient air shall be permanently repaired within 72 hours of discovery. The Executive Officer may approve a request for an extension beyond the 72-hour limit if the request is submitted before the 72-hour time limit has expired.
 - (3) No later than March 30, 2016, pave with concrete or asphalt all facility grounds. Alternatively, the owner or operator may stabilize with dust suppressants all facility grounds, at a frequency no less than what is specified by the manufacturer, as approved in writing by the Executive Officer.
 - (A) An alternative frequency of applying stabilization with dust suppressants may be used based on recommendations by a vendor or installer if the facility can provide information to the Executive Officer demonstrating that the alternative frequency is more appropriate for the specific application at its facility, including factors such as the type of use of the

- dust suppressant, physical properties of the lead containing material, exposure, and adjacent uses.
- (B) Facility grounds used for plant life that have less than a total surface area of 500 square feet, landscaped areas within facility parking lots, and facility perimeter landscaped areas shall not be subject to paragraph (h)(3).
 - (C) Facility grounds that cannot be paved with concrete or asphalt, or otherwise stabilized with dust suppressants, in order to comply with city or other municipal permits, ordinances, State Water Control Board requirements, or any other state or federal agency requirements, shall not be subject to paragraph (h)(3).
 - (D) Facility grounds requiring removal of existing pavement, concrete, asphalt or other forms of stabilization, necessary for construction or maintenance purposes, shall not be subject to this paragraph while undergoing work, and shall be paved with concrete or asphalt, or otherwise stabilized with dust suppressants immediately after all required work is completed. All work shall be conducted in accordance with subdivision (i).
 - (E) Undeveloped facility grounds where no activities or operations are conducted shall not be subject to paragraph (h)(3).
- (4) Remove any weather cap installed on any stack that is a source of lead emissions.
 - (5) Store all materials capable of generating any amount of fugitive lead-dust including, but not limited to, slag and any other lead-containing waste generated from the housekeeping requirements of this subdivision and the construction or maintenance activities of subdivision (i), in sealed leak-proof containers, or stabilize such materials using dust suppressants approved in writing by the Executive Officer, unless located within a total enclosure.
 - (6) Transport all materials capable of generating any amount of fugitive lead-dust including, but not limited to, slag and any other waste generated from the housekeeping requirements of this subdivision, within closed conveyor systems or in sealed, leak-proof containers, or stabilize such materials using dust suppressants approved in writing by the Executive Officer, unless located within a total enclosure. This paragraph shall not be applicable to the transport of high temperature materials exceeding 500 degrees Fahrenheit where implementation of the specified control requirements is infeasible.

- (7) Maintain a mobile wet scrubber or vacuum sweeper that is in compliance with District Rule 1186, or a vacuum equipped with a filter(s) rated by the manufacturer to achieve a 99.97% control efficiency for 0.3 micron particles to conduct the following sweeping activities located outside of a total enclosure:
 - (A) Wet scrub or vacuum sweep all facility areas paved with concrete or asphalt subject to vehicular traffic at least twice per week, unless located within a total enclosure vented to a lead control device or as specified pursuant to subparagraph (h)(7)(B). Wet scrubbing or vacuum sweeping shall not be required in parking spaces that are occupied by parked vehicles or between parked vehicles.
 - (B) Wet scrub or vacuum sweep parking lots that border administrative offices once per week. However, any parking lot that borders an administrative office(s) and is used to transport, handle, or store lead containing materials that have the potential to generate fugitive lead-dust shall be wet scrubbed or vacuum swept in accordance with subparagraph (h)(7)(A).
 - (C) Immediately wet scrub or vacuum sweep any area specified in subparagraph (h)(7)(A), no later than one hour after any construction or maintenance activity or event including accidents, process upsets, or equipment malfunctions that results in the deposition of fugitive lead-dust.
 - (D) Wet scrubbing or vacuum sweeping activities shall not be required during days of measurable precipitation.
- (8) Except when inside a total enclosure, all lead-containing trash and debris shall be placed in covered containers that remain covered at all times except when trash or debris is actively transferred. Trash and debris containers shall be free of liquid or dust leaks.
- (9) Post signs at all entrances and truck loading and unloading areas indicating a:
 - (A) Speed limit of 5 miles per hour (mph) or less on any roadway located within 75 feet of the perimeter of a total enclosure.
 - (B) Speed limit of 15 (mph) or less on any roadway located more than 75 feet from the perimeter of a total enclosure.
- (10) For any of the housekeeping requirements specified under paragraphs (h)(1) through (h)(9), an alternative housekeeping measure can be used provided the owner or operator notifies the Executive Officer that the alternative housekeeping measure meets the same objective and effectiveness of the housekeeping requirement it is replacing, where the objective and effectiveness of each housekeeping requirement is stated in Appendix 3. The owner or operator may

proceed with implementation of the alternative housekeeping measure unless, within seven days of receiving the notification from the owner or operator, the Executive Officer informs the owner or operator that the alternative housekeeping measure does not meet the same objective and/or effectiveness as stated in Appendix 3.

- (i) Construction or Maintenance Activity Requirements
 - (1) Beginning October 2, 2015, the owner or operator shall conduct any construction or maintenance activity and subsequent clean-up using one of the following control measures:
 - (A) Inside a temporary negative air containment enclosure, vented to a District-permitted negative air machine equipped with a filter(s) rated by the manufacturer to achieve a 99.97% control efficiency for 0.3 micron particles, that encloses all affected areas where fugitive lead-dust generation potential exists.
 - (B) Inside a partial enclosure, using wet suppression or a vacuum equipped with a filter(s) rated by the manufacturer to achieve a 99.97% control efficiency for 0.3 micron particles at locations where the potential to generate fugitive lead-dust exists.
 - (C) If conducting construction or maintenance activity and subsequent clean-up inside a partial enclosure creates conditions posing physical constraints, limited accessibility, or unreasonable risks to safety, construction or maintenance activity must be conducted using wet suppression or a vacuum equipped with a filter(s) rated by the manufacturer to achieve a 99.97% control efficiency for 0.3 micron particles, at locations where the potential to generate fugitive lead-dust exists.
 - (2) Construction or maintenance activity shall be stopped immediately when instantaneous wind speeds are ≥ 20 mph, unless the activity is being conducted within a temporary negative air containment enclosure or partial enclosure. Construction or maintenance work may be continued if it is necessary to prevent the release of lead emissions.
 - (3) All concrete or asphalt cutting or drilling performed outside of a total enclosure shall be performed under 100% wet conditions.
 - (4) Grading of soil shall only be performed on soils sufficiently wet to prevent fugitive dust.

- (5) Store in a closed container or clean by wet wash or a vacuum equipped with a filter(s) rated by the manufacturer to achieve a 99.97% control efficiency for 0.3 micron particles, all lead-contaminated equipment and materials used for any construction or maintenance activity immediately after completion of work in a manner that does not generate fugitive lead-dust.
- (j) Source Tests
- (1) Beginning October 2, 2015, the owner or operator shall conduct a source test of all lead point sources at least annually to demonstrate compliance with the facility mass emissions standards specified in subdivision (f). If an annual source test to demonstrate compliance with the lead point source emission standards of subdivision (f) demonstrates a 99% or greater reduction of lead emissions, and total facility mass lead emissions of less than 0.020 pounds per hour, then the next test for all lead point sources shall be performed no later than 24 months after the date of the most recent test.
 - (2) The owner or operator of a metal melting facility with an existing lead emission control device in operation before October 2, 2015 shall conduct a source test for it no later than December 31, 2015. The owner or operator of a metal melting facility with a new or modified lead control device with initial start-up on or after October 2, 2015 shall conduct the initial source test for it within 60 calendar days after initial start-up.
 - (3) At least 60 calendar days prior to conducting a source test pursuant to paragraph (j)(1) or (j)(2), the owner or operator shall submit a pre-test protocol to the Executive Officer for approval. The pre-test protocol shall include the source test criteria of the end user and all assumptions, required data, and calculated targets for testing the following:
 - (A) Target lead mass emission standard;
 - (B) Preliminary target pollutant analytical data;
 - (C) Planned sampling parameters; and
 - (D) Information on equipment, logistics, personnel, and other resources necessary for an efficient and coordinated test.
 - (4) The owner or operator shall notify the Executive Officer in writing one week prior to conducting any source test required by paragraph (j)(1) or (j)(2).
 - (5) The owner or operator shall notify the Executive Officer within three business days (Monday through Friday) of when the facility knew or should have known of any source test result that exceeds any of the emission standards specified in

subdivision (f). Notifications shall be made to 1-800-CUT-SMOG and followed up in writing to the Executive Officer with the results of the source tests within seven business days of notification.

- (6) Source tests shall be conducted while operating at a minimum of 80% of the equipment's permitted capacity and in accordance with any of the following applicable test methods:
 - (A) SCAQMD Method 12.1 – *Determination of Inorganic Lead Emissions from Stationary Sources Using a Wet Impingement Train*
 - (B) ARB Method 12 – *Determination of Inorganic Lead Emissions from Stationary Sources*
 - (C) EPA Method 12 – *Determination of Inorganic Lead Emissions from Stationary Sources*
 - (D) ARB Method 436 – *Determination of Multiple Metal Emissions from Stationary Sources*
- (7) The operator may use alternative or equivalent source test methods as defined in U.S. EPA 40 CFR 60.2, if approved in writing by the Executive Officer, in addition to the Air Resources Board, or the U.S. EPA, as applicable.
- (8) The operator shall use a test laboratory approved under the SCAQMD Laboratory Approval Program for the source test methods cited in this subdivision. If there is no approved laboratory, then approval of the testing procedures used by the laboratory shall be granted by the Executive Officer on a case-by-case basis based on SCAQMD protocols and procedures.
- (9) When more than one source test method or set of source test methods are specified for any testing, the application of these source test methods to a specific set of test conditions is subject to approval by the Executive Officer. In addition, a violation established by any one of the specified source test methods or set of source test methods shall constitute a violation of the rule.
- (10) An existing source test conducted on or after January 1, 2014 for lead emission control devices existing before October 2, 2015 may be used as the initial source test specified in subparagraph (j)(1) to demonstrate compliance with the lead emission control standards of subdivision (f). The source test shall meet, at a minimum, the following criteria:
 - (A) The test is the most recent conducted since January 1, 2014;
 - (B) The test demonstrated compliance with the control requirements of subdivision (f);

- (C) The test is representative of the method to control emissions currently in use; and
 - (D) The test was conducted using applicable and approved test methods specified in paragraphs (j)(6) through (j)(8).
 - (11) Testing conducted by the facility, by the District, or by a contractor acting on behalf of the District or the facility to determine compliance with this rule shall be performed according to the most recent District-approved test protocol for the same purpose or compounds.
 - (12) Reports from source testing conducted pursuant to subdivision (j) shall be submitted to the District in 90 days or less after completion of testing.
- (k) Recordkeeping
- (1) The owner or operator shall keep records of the following:
 - (A) Daily records indicating amounts of lead-containing material melted, the percentage of lead contained within that melted metal, and the basis for any lead percentage calculation. The Executive Officer may approve other alternative methods to calculate the amount of lead melted and the percentages of lead contained within the melted metal. Records to be maintained shall include, but are not limited to, purchase records, usage records, results of analyses, source test data, and other District-approved verification to indicate melting amounts;
 - (B) Results of all ambient air lead monitoring, wind monitoring, and other data specified by subdivision (e); and
 - (C) Records of housekeeping activities completed as required by subdivision (h), construction or maintenance activities required by subdivision (i), periodic smoke tests required by paragraph (f)(5), and emission control device inspection and maintenance required by paragraph (f)(6), including the name of the person performing the activity, and the dates and times at which specific activities were completed.
 - (2) The owner or operator shall maintain all records for five years, with at least the two most recent years kept onsite.
- (l) Ambient Air Monitoring Reports
- (1) Beginning no later than November 2, 2015, the owner or operator of a metal melting facility that meets the requirements of paragraph (e)(3), shall report by the 15th of each month to the Executive Officer, the results of all ambient air lead

and wind monitoring for each preceding month, or more frequently if determined necessary by the Executive Officer. The report shall include the results of individual valid 24-hour samples and 30-day rolling averages for each day within the reporting period.

- (2) Beginning no later than 90 days after a Lead Ambient Air Monitoring and Sampling Plan is approved by the Executive Officer, the owner or operator of a metal melting facility shall report by the 15th of each month to the Executive Officer, the results of all ambient air lead and wind monitoring for each preceding month, or more frequently if determined necessary by the Executive Officer. The report shall include the results of individual valid 24-hour samples and 30-day rolling averages for each day within the reporting period.
- (3) Any exceedances of ambient air lead concentrations specified in subdivision (d) shall be reported with a notification made to the 1-800-CUT-SMOG within 24 hours of receipt of the completed sample analysis required in subdivision (e), followed by a written report to the Executive Officer no later than three calendar days after the notification. The written report shall include the potential causes of the exceedance and the specific corrective actions implemented.

(m) **Compliance Plan**

- (1) The owner or operator shall submit a Compliance Plan if emissions are discharged into the atmosphere which contribute to an ambient air lead concentration or total facility mass lead emissions rate that exceeds any of the following:

Effective Date	Ambient Air Concentration of Lead ($\mu\text{g}/\text{m}^3$) Averaged over any 30 consecutive days	Total Facility Mass Lead Emissions Rate (pounds per hour)
July 1, 2016 – March 31, 2018	0.120	0.080
On or After April 1, 2018	0.100	

An exceedance of the ambient air lead concentrations specified in this paragraph shall occur if it is measured by any monitor installed pursuant to subdivision (e), by any District-installed monitor collocated with a monitor installed pursuant to subdivision (e), or by any District-installed monitor located beyond the property

line of a metal melting facility that measures lead concentrations resulting from the facility. The total facility mass lead emissions rate shall be determined based on the average of triplicate samples, using the most recently approved source tests conducted on behalf of the facility or the District, pursuant to subdivision (j).

- (2) The owner or operator shall notify the Executive Officer in writing within 72 hours of when the facility knew or should have known it exceeded the applicable ambient air lead concentration or total facility mass lead emissions rate specified in paragraph (m)(1).
- (3) The Compliance Plan shall contain a description of lead emission reduction measures necessary to avoid future exceedances of the applicable ambient air lead concentration limit specified in subdivision (d).
 - (A) The lead emission reduction measures shall consider the following categories for those lead emission sources that may have contributed to any monitor that has measured an ambient air lead concentration greater than $0.070 \mu\text{g}/\text{m}^3$ averaged over any 30 consecutive days:
 - (i) Housekeeping, inspection, and construction or maintenance activities;
 - (ii) Total enclosures with negative air pursuant to the requirements in Appendix 1 of this rule;
 - (iii) Modifications to lead emission control devices and total enclosures with negative air;
 - (iv) Installation of multi-stage lead emission control devices, including but not limited to devices that use filter media other than a filter bag(s), such as HEPA and cartridge-type filters rated by the manufacturer to achieve a minimum of 99.97% control efficiency for 0.3 micron particles;
 - (v) Process changes, including reduced throughput limits; and
 - (vi) Conditional curtailments including, at a minimum, information specifying the curtailed processes, process amounts, and length of curtailment.
 - (B) The Compliance Plan shall explain how the owner or operator will identify and implement the lead emission reduction measures necessary to achieve the applicable ambient air lead concentration limit specified in subdivision (d) and how additional measures will be evaluated and implemented in the event of a subsequent exceedance.

- (4) The Compliance Plan shall identify the locations within the facility and method(s) of implementation for each lead emissions reduction measure listed in accordance with paragraph (m)(3).
- (5) The Compliance Plan shall include an implementation schedule for each lead emission reduction measure including those specified pursuant to paragraph (m)(3).
 - (A) The Compliance Plan shall include information that categorizes the lead emission reduction measures based on the potential cause of a reasonable foreseeable exceedance and prioritizes each measure based on the time needed to implement the measure, with the highest priority given to those measures that can be implemented within the shortest amount of time; and
 - (B) The Compliance Plan shall specify a schedule that identifies the length of time needed to implement each lead emission reduction measure. The implementation schedule shall take into consideration the timeframe needed for engineering design, permitting, installing, and commissioning of equipment, if applicable.
 - (C) The Executive Officer may require implementation of additional lead emission reduction measures prior to the completion of implementation of the initial measures if there is information demonstrating that implementation of the initial measures is not enough to avoid a subsequent exceedance of the applicable ambient lead concentration limit specified in subdivision (d).
- (6) A complete Compliance Plan shall be submitted to the Executive Officer in writing for review and approval within 30 calendar days of an initial exceedance of an ambient air lead concentration or total facility mass lead emissions rate pursuant to paragraph (m)(1).
- (7) The owner or operator shall update the Compliance Plan 30 days from any additional exceedances of the ambient air lead concentration or total facility mass lead emissions rate pursuant to paragraph (m)(1). The updated Compliance Plan shall identify any measures implemented pursuant to paragraph (m)(3) through (m)(5) and identify any new measures that can be implemented.
- (8) The review and approval of the Compliance Plan shall be subject to plan fees as specified in Rule 306.
- (9) The Executive Officer shall notify the owner or operator in writing whether the Compliance Plan is approved or disapproved.

- (A) Determination of approval status shall be based on, at a minimum, submittal of information that satisfies the criteria set forth in paragraphs (m)(3) through (m)(5), and whether the plan is likely to lead to avoiding future exceedances of the ambient air concentration limits set forth in subdivision (d).
 - (B) If the Compliance Plan is disapproved, the owner or operator shall resubmit the Compliance Plan, subject to plan fees specified in Rule 306, within 30 calendar days after notification of disapproval of the Compliance Plan. The resubmitted Compliance Plan shall include any information necessary to address deficiencies identified in the disapproval letter. It is a violation of the rule for a facility not to have an approved Compliance Plan after the second denial.
 - (C) If the resubmitted plan is denied, the owner or operator may appeal the denial by the Executive Officer to the Hearing Board under Rule 216 – Appeals and Rule 221 – Plans.
- (10) If lead emissions discharged from the facility contribute to ambient air lead concentrations that exceed the levels specified in the table below within any rolling 24 month period, the owner or operator shall implement the appropriate measure(s) described in the approved Compliance Plan that are necessary to attain the applicable ambient air concentration limit specified in subdivision (d) and notify the Executive Officer of the measures being implemented within 10 business days of when the owner or operator knew or should have known that the ambient lead concentration exceeded the applicable limit specified in paragraph (d)(1).

Effective Date	Ambient Air Concentration of Lead, micrograms per cubic meter ($\mu\text{g}/\text{m}^3$), averaged over any 30 consecutive days	Total # of exceedances (within any rolling 24-month period)
January 1, 2017 – March 31, 2018	0.150	1
On or After April 1, 2018	0.100	3

An exceedance of the ambient air lead concentrations specified in this paragraph shall occur if it is measured by any monitor installed pursuant to subdivision (e), by any District-installed monitor collocated with a monitor installed pursuant to subdivision (e), or by any District-installed monitor located beyond the property line of a metal melting facility that measures lead concentrations resulting from the facility.

- (11) If the owner or operator of a metal melting facility is required to implement lead reduction measures in an approved Compliance Plan pursuant to paragraph (m)(10) and the lead emission rate from all lead point sources as determined pursuant to subdivision (j) is greater than 0.080 pounds per hour, the owner or operator of a metal melting facility shall implement those measures in the approved Compliance Plan that will reduce the lead point source emission rate. The owner or operator of a metal melting facility shall not be required to implement lead emission reduction measures relating to the installation of additional controls on existing control equipment if:
 - (A) Installation of additional/modified controls are already underway during the time of the ambient air lead concentration exceedance; and
 - (B) The installation of additional/modified controls are for the lead point source that caused the ambient air lead concentration exceedance; and
 - (C) No more than 90 days have passed since initial operation of the additional/modified controls.
 - (12) The owner or operator may make a request to the Executive Officer to approve a modified or updated Compliance Plan.
 - (13) The owner or operator shall update the Compliance Plan 12 months from initial approval. Thereafter, the owner or operator shall update the Compliance Plan on or before the annual anniversary of the initial approval if within the preceding 12 months the lead emissions discharged from the facility contributed to ambient air concentrations of lead that exceeded $0.100 \mu\text{g}/\text{m}^3$ averaged over any 30 consecutive days, measured at any monitor pursuant to subdivision (e), or by any District-installed monitor located beyond the property line of a metal melting facility that measures lead concentrations resulting from the facility. Compliance Plan updates shall indicate measures that have been implemented and identify any new or enhancements to existing lead emission reduction measures.
- (n) Visible Emissions

Beginning October 2, 2015, the owner or operator of a metal melting facility shall not discharge into the atmosphere fugitive lead-dust emissions that exceed Ringlemann 0.5, or 10 percent opacity, for more than three minutes aggregate in any 60-minute period.

(o) Exemptions

(1) Ambient Air Monitoring Relief Plan

An owner or operator of a metal melting facility that demonstrates ambient air lead concentration levels of less than or equal to $0.070 \mu\text{g}/\text{m}^3$ averaged over 30 consecutive days, measured during normal operating conditions that are representative of the facility, may be exempt from the ambient air monitoring requirements set forth in subdivision (e) upon Executive Officer approval of an air monitoring relief plan, which shall be granted if the plan contains all of the following:

- (A) Air dispersion modeling analysis that demonstrates an ambient air lead concentration of $\leq 0.070 \mu\text{g}/\text{m}^3$ averaged over 30 consecutive days that is representative of normal facility operations; and
- (B) One year of ambient air lead monitoring data without a single 30 consecutive day average exceeding an ambient air lead concentration of $0.070 \mu\text{g}/\text{m}^3$; and
- (C) Most recent source tests approved by the District demonstrate a total facility mass lead emissions rate from all lead point sources of less than 0.040 pounds per hour.

Any violation of the ambient air lead concentrations required by subdivision (d) or any permit modification to equipment or processes that results in an increase in lead emissions that can be shown to cause an exceedance with the ambient air lead concentrations required by subdivision (d) shall result in revocation of the air monitoring relief plan. Upon revocation of the air monitoring relief plan, the owner or operator of a metal melting facility shall comply with the requirements of subdivision (e) no later than 180 days after revocation of the air monitoring relief plan.

(2) Lead Point Source Emissions Controls

Any lead point source that has an uncontrolled emission rate of 0.005 pounds per hour or less shall be exempt from the requirements of subdivision (f) of this rule provided that a source test pursuant to subdivision (j) is conducted for the lead point source at least once every 24 months.

(3) Lead Minimization

The owner or operator of a metal melting facility as described in subdivision (b) shall not be subject to the requirements of this rule if the amount of lead melted at the facility has been reduced to less than 50 tons per year based on lead melting limits specified in facility permit conditions, and facility lead processing records required under subdivision (k) of this rule or subdivision (i) of Rule 1420 – Emissions Standards for Lead. A facility exempt from this rule shall be subject to requirements of Rule 1420.

(4) Rule 1420

An owner or operator of a metal melting facility subject to this rule shall be exempt from the requirements of Rule 1420. A Rule 1420 Compliance Plan that has been issued to the owner or operator of a metal melting facility prior to October 2, 2015 shall be subsumed into the requirements of this rule and be considered a Rule 1420.2 Compliance Plan. The owner or operator shall continue to comply with all conditions stated within the plan in addition to the requirements of subdivision (m) if triggered.

Appendix 1 – Requirements for Total Enclosures with Negative Air

The following provides the requirements for Total Enclosures with Negative Air that must be complied with pursuant to paragraph (g)(3) or included in the Compliance Plan as specified in clause (m)(3)(A)(iii).

1. Total Enclosure Emissions Control

The owner or operator shall vent each total enclosure under negative pressure to an emission collection system that ducts the entire gas stream that may contain lead to a lead emission control device pursuant to subdivision (f).

2. Total Enclosure Ventilation

Ventilation of the total enclosure at any opening including, but not limited to, vents, windows, passages, doorways, bay doors, and roll-ups shall continuously be maintained at a negative pressure of at least 0.02 mm of Hg (0.011 inches H₂O) measured by paragraph (3) of this Appendix.

3. Digital Differential Pressure Monitoring Systems

The owner or operator shall install, operate, and maintain a digital differential pressure monitoring system for each total enclosure as follow:

(A) A minimum of one building digital differential pressure monitoring system shall be installed and maintained at each of the following three walls in each total enclosure having a total ground surface area of 10,000 square feet or more:

(i) The leeward wall;

(ii) The windward wall; and

(iii) An exterior wall that connects the leeward and windward wall at a location defined by the intersection of a perpendicular line between a point on the connecting wall and a point on its furthest opposite exterior wall, and intersecting within plus or minus ten (+10) meters of the midpoint of a straight line between the two other monitors specified for the leeward wall and windward wall. The midpoint monitor shall not be located on the same wall as either of the other two monitors specified for the leeward wall and windward wall.

(B) A minimum of one building digital differential pressure monitoring system shall be installed and maintained at the leeward wall of each total enclosure that has a total ground surface area of less than 10,000 square feet.

(C) Digital differential pressure monitoring systems shall continuously record, at a minimum, 1-minute data for differential pressure measurements which are to be

used to calculate rolling 15-minute averages in order to determine compliance with a negative pressure of at least 0.02 mm of Hg (0.011 inches H₂O).

- (D) Digital differential pressure monitoring systems shall be certified by the manufacturer to be capable of measuring and displaying negative pressure in the range of 0.01 to 0.2 mm Hg (0.005 to 0.11 inches H₂O) with a minimum increment of measurement of plus or minus 0.001 mm Hg (0.0005 inches H₂O).
 - (E) Digital differential pressure monitoring systems shall be equipped with a continuous strip chart recorder. An electronic recorder may be approved for use by the Executive Officer if the recorder is capable of writing data on a medium that is secure and tamper-proof, and the recorded data is readily accessible upon request by the Executive Officer. If software is required to access the recorded data that is not readily available to the Executive Officer, a copy of the software, and all subsequent revisions, shall be provided to the Executive Officer at no cost. If a device is required to retrieve and provide a copy of such recorded data, the device shall be maintained and operated at the facility.
 - (F) Digital differential pressure monitoring systems shall be calibrated in accordance with manufacturer's specifications at least once every 12 calendar months or more frequently if recommended by the manufacturer.
 - (G) Digital differential pressure monitoring systems shall be equipped with a backup, uninterruptible power supply to ensure continuous operation of the monitoring system during a power outage.
4. In-draft Velocity
The in-draft velocity of the total enclosure shall be maintained at > 200 feet per minute at any opening including, but not limited to, vents, windows, passages, doorways, bay doors, and roll-ups. In-draft velocities for each total enclosure shall be determined by placing an anemometer, or an equivalent device approved by the Executive Officer, at the center of the plane of any opening of the total enclosure.
5. Alternative Monitoring Methods and Procedures
The owner or operator may submit an alternative to any monitoring method or procedure of this Appendix for review and approval by the Executive Officer. Approval shall be granted if it is demonstrated that the alternative method or procedure is equally or more effective than the methods or procedures prescribed in this Appendix.

Appendix 2 - Smoke Test to Demonstrate Capture Efficiency for Ventilation Systems of Add-on Air Pollution Control Device(s) Pursuant to Paragraph (f)(5)

1. Applicability and Principle
 - 1.1 Applicability. This method is applicable to all lead point sources where an add-on air pollution control device is used to capture and control emissions of lead.
 - 1.2 Principle. Collection of lead emissions from lead point sources is achieved by the ventilation system associated with the add-on air pollution control device for lead processing equipment including, but not limited to hot processes that melt lead or other processes that produce lead dust. Emission control efficiency at the exhaust of an add-on air pollution control device is related to capture efficiency at the inlet of the ventilation system. For this reason, it is imperative that 100% capture efficiency is maintained. A smoke device placed within the area where collection of lead emissions by the ventilation system occurs reveals this capture efficiency.
2. Apparatus
 - 2.1 Smoke Generator. Adequate to produce a persistent stream of visible smoke (e.g., Model #15-049 Tel-Tru™ T-T Smoke Sticks from E. Vernon Hill, Incorporated). The smoke generating device should not provide excessive momentum to the smoke stream that may create a bias in the determination of collection efficiency. If the device provides slight momentum to the smoke stream, it shall be released perpendicular to the direction of the collection velocity.
3. Testing Conditions
 - 3.1 Equipment Operation: Any equipment to be smoke tested that is capable of generating heat as part of normal operation must be smoke tested under those normal operating conditions. Temperatures of pots or firing rates shall be recorded to verify operation. The smoke test shall be conducted while the add-on air pollution control device is in normal operation. The position of any adjustable dampers that can affect air flow shall be documented.
 - 3.2 Cross Draft: The smoke test shall be conducted while the add-on air pollution control device is in normal operation and under typical draft conditions representative of the facility's lead processing operations. This includes cooling fans and openings affecting draft conditions around the process area including, but not limited to, vents, windows, doorways, bay doors, and roll-ups. The smoke generator must be at full generation during the entire test and operated according to manufacturer's suggested use.

4. Procedure
 - 4.1 Collection Slots: For work stations equipped with collection slots or hoods, the smoke shall be released at points where lead emissions are generated (e.g. the point where welding or stacking of grids occurs). Observe the collection of the smoke to the collection location(s) of the ventilation system. An acceptable smoke test shall demonstrate a direct stream to the collection location(s) of the ventilation system without meanderings out of this direct path. Smoke shall be released at points not to exceed 12 inches apart across ventilated work areas. Record these observations at each of the points providing a qualitative assessment of the collection of smoke to the ventilation system.
 - 4.2 Enclosures: Enclosures include equipment where emissions are generated inside the equipment and the equipment is intended to have inward air flow through openings to prevent the escape of process emissions. Types of enclosures include, but are not limited to lead pots and grid casting machines. The smoke shall be released at points outside of the plane of the opening of the equipment, over an evenly spaced matrix across all openings with points not to exceed 12 inches apart. Observe the inward movement of the smoke to the collection location(s) of the ventilation system. An acceptable smoke test shall demonstrate a direct stream into the equipment without meanderings out of this direct path. Record these observations at each of the points providing a qualitative assessment of the collection of smoke to the ventilation system.
5. Documentation: The smoke test shall be documented by photographs or video at each point that clearly show the path of the smoke. Documentation shall also include a list of equipment tested and any repairs that were performed in order to pass the smoke test. As previously discussed, the documentation shall include the position of adjustable dampers, cross draft conditions, and the heat input of the equipment, if applicable. The documentation shall be signed and dated by the person performing the test. The records shall be maintained on site for at least two years and be made available to District personnel upon request.

**Appendix 3 - Objectives of Housekeeping Requirements
Set Forth in Paragraph (h)**

Housekeeping Measure/Paragraph	Objective	Effectiveness
(h)(1)	To clean or remove accumulated lead dust on surfaces specified under subparagraph (h)(1)(A), (h)(1)(B), and (h)(1)(C).	Any method that can clean or remove accumulated lead dust for the areas specified in paragraph (h)(1) at a frequency that provides for the same or better efficiency than implementing the required housekeeping measure and ensures that lead dust will not be generated by the alternative measure
(h)(2)	To ensure that total enclosures or structures specified in paragraph (h)(2) are free from gaps, breaks, separations, leak points or other possible routes for emissions of lead or fugitive lead dust.	Any method that can identify possible routes for emissions of lead or fugitive dust that are as or more effective than visually inspecting.
(h)(3)	To minimize fugitive lead-dust emissions from facility grounds used for operational activities.	Any method that is equally or more effective as encapsulation or physical or chemical containment of lead dust from facility grounds.
(h)(4)	To minimize accumulation near lead emission point sources.	Demonstrate that use of a weather cap does not impact the dispersion of lead dust or increase the accumulation of lead dust in and around facility more than the removal of a weather cap.
(h)(5)	To minimize fugitive lead-dust emissions from the storage of materials capable of generating fugitive lead-dust emissions specified under paragraph (h)(5).	Any method that is equally or more effective as a sealed-leak proof container or physical or chemical containment of lead dust from areas specified under paragraph (h)(5).

Housekeeping Measure/Paragraph	Objective	Effectiveness
(h)(6)	To minimize fugitive lead-dust emissions from the transport of materials capable of generating fugitive lead-dust emissions from areas specified under paragraph (h)(6).	Any method that is equally or more effective as a closed conveyor system, sealed-leak proof container, or physical or chemical containment during transport of lead dust from areas specified under paragraph (h)(6).
(h)(7)	To clean or remove accumulated lead dust on surfaces specified under paragraph (h)(7).	Any method that can clean or remove accumulated lead dust for the areas specified in paragraph (h)(7) at a frequency that provides for the same or better efficiency than implementing the required housekeeping measure and ensures that lead dust will not be generated by the alternative measure
(h)(8)	To minimize fugitive lead-dust emissions from all lead-containing trash and debris.	Any method that can contain lead-containing trash and debris that is as or more effective than a covered container.
(h)(9)	To notify persons that are operating vehicles within the facility the speed limit to minimize fugitive lead-dust emissions from vehicular movement.	Any method that effectively reduces vehicle speed to, or communicates to persons operating vehicles within the facility, the speed limit specified in paragraph (h)(9).